

REMARKS

By this amendment, claims 1-21, 50 and 51 are pending, in which no claim is canceled, withdrawn, currently amended, or newly presented. Claims 22-49 were previously canceled.

The Office Action mailed September 30, 2008 rejected claims 1, 4, 9, 11-12, 15 and 50-51 as obvious under 35 U.S.C. § 103 based on *Christodoulides et al.* (US 6,665,361) in view of *Raleigh et al.* (US 6,158,041) further in view of *Kuznicki* (US 5,282,205), claims 2, 10, 13 and 21 based on *Christodoulides et al.* in view of *Raleigh et al.* and *Kuznicki* and further in view of *Paulter et al.* (US 6,859,503), claims 3 and 14 based on *Christodoulides et al.* in view of *Raleigh et al.* and *Kuznicki* and further in view of *Mogre et al.* (US 2004/0047433), claims 5, 6 and 16-17 based on *Christodoulides et al.* in view of *Raleigh et al.* and *Kuznicki* and further in view of *Gardner* (US 5,627,499), claims 7 and 18 based on *Christodoulides et al.* in view of *Raleigh et al.* and *Kuznicki* and further in view of *Kim et al.* (US 6,851,085), and claims 8 and 19 based on *Christodoulides et al.* in view of *Raleigh et al.* and *Kuznicki* and further in view of *Love et al.* (US 7,158,482).

Applicants respectfully traverse the several rejections, as explained below.

Independent claim 1 recites “mapping a codeword specifying framing information of a frame according to a signal constellation to output a data stream; duplicating and demultiplexing the data stream into a first data stream and a second data stream.” Independent claim 12 recites “a constellation mapper configured to map a codeword specifying framing information of a frame according to a signal constellation to output a data stream, wherein the data stream is demultiplexed into a first data stream and a second data stream.” To meet the above features, the Office Action (on page 2, item 4), refers to *Christodoulides et al.*, FIG. 5, col. 5, lines 43-48 and 56-58, and col. 5, line 66-col. 6, line 6:

[lines 43-48] Each frame F carries a header containing a unique word (UW) comprising a predetermined sequence of 40 symbols, to assist in acquiring the signal and determining the signal type. The unique word symbols comprise only two bits, mapped onto the most protected bits u₁, U₃ of the 16 QAM constellation.

[lines 56-58] The unique word comprises a data unique word UWD which indicates that the body of the frame F contains user data.

[col. 5 line 66-col. 6, line 6] As shown in FIG. 6b, the data symbols in each frame comprise two subframes SF1 and SF2 each comprising 596 symbols of decoded data generated by the encoder 28. As shown in FIG. 6c, each subframe is generated by the encoder 28 from a corresponding multiplexed frame MF1, MF2 output from the multiplexer 24 through the scrambler 26, comprising 1184 data bits D and 48 signalling unit bits SU.

As best understood from the referenced passages, the Examiner is presumably equating the mapping process of the Applicants to the mapping process of *Christodoulouides et al.* implemented by the QAM modulator 32 of FIG. 2a. As shown in the figure, the modulator 32 receives symbols from the transmit synchronizer 30 (specifying framing information) whereby the UW symbols are mapped onto the most protected bits of the 16 QAM constellation by the QAM modulator. The Examiner then presumably equates the duplicated first data stream and second data stream of the Applicants to *Christodoulouides et al.*'s subframes SF1 and SF2. According to claims 1 and 12 of the Applicants, the method disclosed in these claims involves "mapping a codeword to output a data stream" and then "duplicating and demultiplexing the data stream into a first and second data stream". *Christodoulouides et al.*, on the other hand, **first** generates the subframes SF1 and SF2 at the Turbo encoder 28 of FIG. 2a which is **then** applied to the transmit synchronizer 30 whose output is passed onto the QAM modulator 32 for mapping the bits onto the QAM constellation. This is clearly indicated in the above referenced passages.

Furthermore, the Examiner is assuming that SF1 and SF2 are the duplicated and demultiplexed data streams of the Applicants, however nowhere does *Christodoulouides et al.*

teach that they are duplicates of one another. *Christodouloulides et al.* merely discloses that each subframe (SF) comprises 596 symbols of encoded data generated by the encoder 28. Even though both subframes comprise of identical number of symbols, they need not comprise duplicate data streams. There would, in fact, be no motivation by *Christodouloulides et al.* to include duplicate data streams within each subframe as it would be a waste of resources by the transmitter without providing any foreseeable advantage. Thus, *Christodouloulides et al.* clearly fails to disclose the subject matter of these claims.

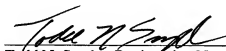
Moreover, this undesirable outcome would appear to teach away from the claimed invention. A reference should be considered as a whole, and portions arguing against or teaching away from the claimed invention must be considered. ***Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve Inc.***, 796 F.2d 443, 230 USPQ 416 (Fed. Cir. 1986).

The other secondary references, *Raleigh et al.*, *Kuznicki*, *Paulter et al.*, *Mogre et al.*, *Gardner*, *Kim et al.* and *Love et al.*, do not fill in the gaps of *Christodouloulides et al.* Therefore, no *prima facie* case of obviousness has been established.

Therefore, the present application, as amended, overcomes the objections and rejections of record and is in condition for allowance. Favorable consideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (310) 964-0560 so that such issues may be resolved as expeditiously as possible.

To the extent necessary, a petition for an extension of time under 37 C.F.R. §1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 50-0383 and please credit any excess fees to such deposit account.

Respectfully Submitted,



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